IN THE CLAIMS

Please amend the claims as follows:

1. (original) A servo system for generating a normalized digital actuator-signal from a first and control signal (P) and a second control signal (Q), said servo system comprising a sigma delta modulator for generating a digital representation of a quotient (P - Q)/(P + Q) between a difference (P - Q) and a sum of the two control signals (P + Q), characterized in that the sigma-delta-modulator is an analog sigma-delta-modulator (M) having an analog low-pass filter (F), a quantizer (E) arranged for receiving an output signal of the analog low-pass filter, a multiplying DA-converter (W) for converting and multiplying an output signal of the quantizer by the sum (P + Q) of the first and second control signals and means for supplying the difference (P - Q) of the first and second control signals and the output signal of the multiplying DA-converter (W) to an input of the analog low-pass filter (F).

2. (original) A servo system as claimed in claim 1, characterized by a 1 bit quantizer (E) and in that the multiplying DA-converter (W) comprises a current source ($i_{p+q}$) for supplying the sum of the first and second control signals and switch means ($W_1$, $W_2$)

controlled by the output signals of the quantizer for switching said current source to the input of the low-pass filter (F).

3. (original) A servo system as claimed in claim 2, characterized in that the analog low-pass filter (F) is a differential analog low-pass filter having a first and a second input terminal to which the first and second control signals ($i_p$, $i_q$) respectively are applied.

4. (original) A servo system as claimed in claim 3, characterized by a common mode control circuit ($C_m$) for stabilizing the common mode voltage at the input of the differential analog low-pass filter (F).

5. (original) A servo system as claimed in claim 4, characterized in that the common mode control circuit is an operational transconductance amplifier ($T_7$...$T_{10}$) having an input for receiving a mean voltage of the two input terminals of the analog low-pass filter and a reference voltage ($V_R$) and whose output constitutes said current source ($i_{p+q}$) for supplying the sum of the first and second control signals.

6. (original) A servo system as claimed in claim 2, characterized in that the analog low-pass filter comprises a first and a second single-ended integrator ($G_1$, $G_2$) for integrating the first and second control signals respectively, and an operational transconductance amplifier ($O_3$) having an input for receiving the mean voltage of the two output terminals of the analog low-pass filter ($G_1$, $G_2$) and a reference voltage ($V_{R2}$) and whose output constitutes said current source ($i_{p+q}$) for supplying the sum of the first and second control signals.

7. (currently amended) An apparatus comprising a servo system, characterized in that the servo system is a servo system as claimed in ~~any of the claims 1 to 6~~claim 1.

8. (original) A sigma delta modulator for generating a digital representation of a quotient (P - Q)/(P + Q) between a difference (P - Q) and a sum (P + Q) of a first control (P) and a second control signal (Q) signal, characterized in that the sigma-delta-modulator is an analog sigma-delta-modulator (M) having an analog low-pass filter (F), a quantizer (E) receiving an output signal of the analog low-pass filter, a multiplying DA-converter (W) for converting and multiplying an output signal of the quantizer with the sum (P + Q) of the first and second control signals and means

for supplying the difference (P - Q) of the first and second control signals and the output of the multiplying DA-converter (W) to an input of the analog low-pass filter (F).

9. (original) A sigma delta modulator as claimed in claim 8, characterized in that the quantizer (E) is a 1 bit quantizer (E) and in that the multiplying DA-converter (W) comprises a current source ($i_{p+q}$) for supplying the sum of the first and second control signals and switch means ($W_1$, $W_2$) controlled by the output signal of the quantizer for switching said current source to the input of the low-pass filter (F).

10. (original) A sigma delta modulator as claimed in claim 9, characterized in that the analog low-pass filter (F) is a differential analog low-pass filter with a first and a second input terminal to which the first and second control signals ($i_p$, $i_q$) respectively are applied.

11. (original) A sigma delta modulator as claimed in claim 10, characterized by a common mode control circuit ($C_m$) for stabilizing the common mode voltage at the input of the differential analog low-pass filter (F).

12. (original) A sigma delta modulator as claimed in claim 11, characterized in that the common mode control circuit is an operational transconductance amplifier ($T_7$...$T_{10}$) having an input for receiving a mean voltage provided at the first and second input terminals of the analog low-pass filter and a reference voltage ($V_R$) and whose output constitutes said current source ($i_{p+q}$) for supplying the sum of the first and second control signals.

13. (original) A sigma delta modulator as claimed in claim 9, characterized in that the analog low-pass filter comprises a first and a second single-ended integrator ($G_1$, $G_2$) for integrating the first and second control signals respectively and an operational transconductance amplifier ($O_3$) having an input for receiving the mean voltage of the two output terminals of the analog low-pass filter ($G_1$, $G_2$) and a reference voltage ($V_{R2}$) and whose output constitutes said current source ($i_{p+q}$) for supplying the sum of the first and second control signals.

14. (currently amended) An integrated circuit comprising a sigma delta modulator as claimed in ~~any of the claims 8 to 13~~claim 8.